2006
NON-TOXIC DRY CLEANING INCENTIVE PROGRAM

DEMONSTRATION GUIDELINES
FOR THE CALIFORNIA DRY CLEANING INDUSTRY

STATIONARY SOURCE DIVISION
EMISSION ASSESSMENT BRANCH

May 2006

State of California
AIR RESOURCES BOARD

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I. INTRODUCTION

The California State Legislature enacted Assembly Bill (AB) 998, which establishes the Non-Toxic Dry Cleaning Incentive Program. The objective of this program is to provide financial assistance to California dry cleaners who replace their existing perchloroethylene (perc) dry cleaning systems with non-toxic and non-smog forming systems such as water-based and carbon dioxide (CO_2) cleaning systems.

AB 998 requires the Air Resources Board (ARB) to assess a three-dollar ($3) per gallon fee on the importers of perc for dry cleaning operations beginning January 1, 2004. This fee will increase one dollar ($1) per gallon per year from 2005 through 2013. As required by the legislation, the majority of these funds will be used to establish a grant program to provide $10,000 grants to assist dry cleaners in switching to non-toxic and non-smog forming cleaning technologies. The balance of funds will be used to establish a demonstration program to showcase these technologies statewide. ARB is to ensure that at least 50 percent of the grant funds provided are awarded to qualifying dry cleaners in environmental justice communities of minority or low-income populations.

This document discusses the provisions of the demonstration program. The grant program guidelines is provided in separate document titled "*2006 Non-Toxic Dry Cleaning Incentive Program Grant Guidelines for the California Dry Cleaning Industry*." Please contact ARB if you are interested in receiving this packet or visit our website at www.arb.ca.gov/toxics/dryclean/ab998.htm to download the document.

II. ELIGIBILITY CRITERIA

To be eligible for the demonstration program, the applicant must be seeking to establish one (or more) demonstration facilities within the State of California. Although applicants are not required to own or operate a dry cleaning facility, they need to have an intimate understanding of how the California dry cleaning industry operates. Demonstration programs may not profit financially or have any financial stake from selling AB 998 qualified non-toxic and non-smog forming cleaning technologies. The program facility

must operate using AB 998 qualified technologies only.

This program requires matching funds, which can come from any entity including, but not limited to, state agencies, federal or county agencies, public utility districts, local districts, or nonprofit entities. Fund recipients are required to match State funds equally (at a minimum) such that State funding does not exceed 50 percent of the total cost of the project. For example, a request for $50,000 must be matched by no less than $50,000 from a qualifying entity. Matching funds may be dollars and/or in-kind goods and services.

III. QUALIFYING TECHNOLOGIES

Only proposals which establish demonstration facilities based on non-toxic and non-smog forming dry cleaning systems qualify for funding under this program. Currently, the following technologies satisfy this requirement:

- Water-based cleaning systems; and
- Carbon dioxide (CO_2) cleaning systems

At this time, proposals to establish demonstration facilities using other technologies will not be considered. Below is a brief description of the qualifying technologies.

A. Water-based Cleaning Systems

Currently, there are three types of water-based cleaning technologies available to California dry cleaners. Those technologies are: 1) professional wet cleaning systems, 2) the Green Jet® cleaning system, and 3) cold water cleaning systems.

1. Professional Wet Cleaning Systems

   The professional wet cleaning system is an alternative to dry cleaning for fabrics labeled “dry clean only” and employ the use of specialized computer controlled washers and dryers. The immersion-based washers use a frequency-controlled motor to control the rotation of the wash drum which produces a gentle wash action and smoother acceleration and deceleration. The wash program software can determine the appropriate combination of time, water level, water temperature, extraction, and drum rotation. Washers are also designed to mix water with cleaning agents prior to entering the cleaning drum. The dryers used in professional wet cleaning are based on humidity and are able to end the cycle when the desired humidity level in the garments has been achieved. Temperature, drying time, and direction of drum rotation can also be programmed. Finishing equipment includes pressing and tensioning machines. When selecting a professional wet cleaning system under this demonstration program, the tensioning pants topper and form finisher are required.

2. Green Jet® Cleaning System

The Green Jet® cleaning system cleans and dries garments in a single computerized unit. The cleaning process involves using a mist of water and detergent to clean the garments. The machine is designed to receive a full 45 pound load of garments. It then dehydrates the fabric to remove humidity to reduce surface tension, in order to allow the mechanical action and air jets pulsating to dislodge and remove the non-soluble soil from the garments. The soil is then collected in a lint chamber. The next step in the cycle is to inject a pre-determined amount of water-based cleaning solution through specially designed and placed air jet nozzles to re-hydrate the fabric. After about a pint of solution has been introduced to the load to remove soluble soil, heavy felt pads attached to the ribs and the cylinder absorb the soluble soil. This process is appropriate for cleaning garments that are lightly soiled. After the cleaning process, the unit goes into a conventional dry cycle and then a cool-down cycle.

3. Cold Water Cleaning Systems

Cold water cleaning systems are similar to traditional wet cleaning systems but incorporate other features. Cold water cleaning systems use chilled water and are designed to minimize shrinkage. The system consists of a washer and a dryer. The washer uses a computer to control the rotation of the cleaning drum in order to minimize agitation while cleaning the garments. The garments that are commonly dry cleaned are processed in icy water and are dried in cold air. The washer is fitted with a refrigerated condenser so it can operate with the water at lower temperature. In the dryer, the garments are partially dried in heated air and cold air, which is generated with a compressor. The garments can be fully dried in the dryer using longer drying cycle.

B. Carbon Dioxide (CO_2) Cleaning System

The CO_2 process is a carbon dioxide-based garment cleaning process that has been developed for use by commercial and retail dry cleaners. It is a high pressure cleaning system utilizing liquid CO_2 and a cleaning solvent. CO_2 is a non-flammable, non-toxic, colorless, tasteless, odorless naturally-occurring gas that, when subjected to pressure, becomes a liquid solvent. The CO_2 used in the garment cleaning process is an industrial by-product from existing operations, such as production of ethanol by fermentation and anhydrous ammonia (fertilizer) production. The CO_2 cleaning process does not produce any new CO_2 and, thus, does not contribute to global warming. The system is closed-loop, with a cleaning chamber, storage unit, distillation and lint trap.

Table 1. Summary of Qualified Technologies[1]

Cleaning System	Estimated Cleaning Capability	Comments
Professional Wet Cleaning	Aggressive	• Process can be labor intensive. • Training recommended to improve understanding of process and help reduce labor costs. • Tensioning equipment required to help minimize shrinkage.[2]
Green Jet	Very gentle	• Non-immersion system. • More suitable for lightly-soiled garments but not suitable for heavily-soiled garments. • Tensioning equipment may be purchased at dry cleaners discretion.
Cold Water Cleaning	Aggressive	• Longer drying cycle when compared to Perc-based systems. • Tensioning equipment may be purchased at dry cleaners discretion.
Carbon Dioxide (CO_2)	Gentle	• Longer drying cycle when compared to Perc-based systems. • Some issues with aggressiveness of available detergents.

1. ARB has not verified or certified the cleaning performance of these systems.
2. Tensioning equipment must be purchased with professional wet cleaning systems in order to be eligible for the program.

IV. PROPOSAL REQUIREMENTS

All proposals must include the information listed below.

- ***Applicant Identification*** – This section should include the primary contact person's name and phone number and the contact name(s) of any party providing matching funds or services.

- ***Proposal Summary*** – This section should describe how you will develop, implement, and measure the effectiveness of your demonstration project. It should also indicate how the applicant and the parties providing matching funds or services will work together.

- ***Project Schedule and Tasks*** – This section should summarize the project tasks and deliverables and completion dates. It should also identify any documents which will be submitted to ARB. All proposals must provide progress reports to ARB on at least a semi-annual basis and a final report at the end of the project (end of funding).

- ***Detailed Budget*** – This section should provide a break-down and justification of the budget. Supporting documents should be provided as necessary.

- ***Experience/Capability*** – This section should include resumes or a background of the applicant (and other key participants). It should also include a description of

participant's experience as it relates to dry cleaning and the proposed project. The reviewers will be looking for a clear indication of the participants' ability to establish and manage a demonstration project.

- ***Letters of Support*** – Each proposal should include at least two letters of support.

V. PROCESS FOR SELECTING RECIPIENTS

Proposals must be postmarked no later than **June 30, 2006**. Please submit proposals to:

SSD Dry Cleaning Demonstration Program
California Air Resources Board
P.O. Box 2815
Sacramento, California 95812

All proposals will be evaluated by Stationary Source Division staff. Proposals will be initially screened to ensure that:

1. The proposal is from an eligible applicant.

2. The proposal is for establishing dry cleaning demonstration facilities in the State of California using water-based cleaning technologies, CO_2 cleaning, or any combination thereof.

3. The proposal demonstrates that the applicant and other participants have sufficient knowledge and experience related to dry cleaning.

4. The proposal clearly describes how the applicant will develop and implement a demonstration program.

5. The proposal demonstrates the need for a range of qualifying non-toxic and non-smog forming technologies, the need to service several different geographical locations in California, and the applicant's operating and training experience with dry cleaning technologies.

Proposals that pass these screening criteria will be evaluated using the following criteria:

1. If an applicant already has procured qualifying technologies in a dry cleaning facility using grant funding or other in-kind funding, then, the proposal must not show the need for funding to procure equipment.

2. The proposal makes effective and judicious use of the requested state funds and demonstrates that the matching funds relate directly to the program and are clearly accountable.

3. The proposal clearly shows how it will benefit the dry cleaning industry and

achieve the purposes set forth in AB 998.

At the end of the selection process, a letter will be sent out to the applicants. Funding decisions will be made in **August 2006**. Actual dollar amounts to be awarded may be adjusted to meet funding limitations.

VI. FOR MORE INFORMATION

Should you have any questions, please contact Hafizur Chowdhury at (916) 322-2275 or via e-mail to hchowdhu@arb.ca.gov.